

DISCUSSION OF THE CLAIMS

Claims 1, 3-12, 14-22, 24-28, 30-38, 40, 46-51 and 53-59 are active in the present application. Claim 59 is a new claim. Support for the new claim is found in previously presented Claims 53 and 11. Claims 2, 13, 23, 29, 41-45 and 52 are canceled claims. Claim 53 is amended herein for clarity. Support for the amendment is found, for example, in Example 1 of the present specification (see paragraphs [0060]-[0061] of the P.G. publication corresponding with the present application, i.e., U.S. 2005/0070193).

No new matter is added.

REMARKS

Independent Claim 1

Present Claim 1 is drawn to a membrane that includes a substrate “having a porosity of more than 50%”. Applicants’ September 14, 2009 Amendment included arguments that the art cited by the Office fails to disclose or suggest at least this feature of the presently claimed invention (see pages 11-12 of Applicants’ September 14, 2009 Amendment). The Office responded by stating that Applicants’ calculation of pore size was unclear and therefore the rejection should stand (see pages 15-16 of the November 23, 2009 Office Action).

Applicants submit herewith evidence showing that the Penth patent (U.S. 6,309,545) does not disclose or suggest a material having a porosity of greater than 50%. As noted in Applicants’ September 14 Amendment, Penth describes a mesh having “a mesh size of 90 μm ” and a pore width of “0.2 to 0.4 μm ” (see Example 2.1 of Penth). A mesh having a mesh size of 90 μm corresponds to a standard 170 mesh on the Tyler scale (porosity may also be measured by mercury porosimetry see the paragraph bridging pages 8 and 9 of the specification). Applicants submit herewith a comparison of standard mesh and sieve sizes downloaded from <http://delloyd.50megs.com/moreinfo/mesh.html> on December 8, 2009. The chart provides a correlation of mesh size in microns with other standardized mesh designations such as the “Tyler” mesh designation. It is readily evident that a mesh size of 90 μm corresponds to a Tyler mesh size of 170.

Applicants further submit herewith a definition of mesh size obtained from www.wikipedia.org. It is readily evident from this information that Tyler mesh size “is the number of openings per (linear) inch of mesh” (see the first page of the mesh size definition).

The mesh of Example 2.1 of Penth has a mesh size of 90 μm and is equivalent to a Tyler mesh having 170 openings per linear inch. The openings of the Penth mesh have a

maximum width of 0.4 μm . If one assumes that all of the openings of the mesh of Penth have the maximum width (i.e., 0.4 μm) one can calculate the resultant porosity:

$$\begin{aligned} & (\text{width of the total number of openings})/(\text{one linear inch}) \rightarrow \\ & ((170 \times 0.4 \mu\text{m} \times (1 \text{ inch}/25,400 \mu\text{m}))/(\text{one linear inch}) \rightarrow \\ & 0.0027 \text{ inch/linear inch} \approx 0.3\% \text{ porosity.} \end{aligned}$$

Applicants thus submit it is readily evident that the mesh of Penth does not meet the porosity requirements of the present claims.

Further still, the present claims recite a sheetlike flexible substrate that is a **non-woven** polymeric fiber. Example 2.1 of Penth describes a substrate having a “square mesh.” Applicants submit that those of skill in the art readily recognize that a porous substrate made from a non-woven polymeric fiber forms a mesh having pores that are different from the pores in a substrate made from a woven fiber. For example, the pores of a woven fiber substrate are inherently square in form whereas the pores of a non-woven fiber substrate do not have a regularly recurring square pattern such as that of a woven fiber substrate. The evidence of record thus further demonstrates that Penth fails to suggest the subject matter of the present claims.

Applicants thus respectfully request withdrawal of the rejection in view of Penth in combination with Bishop (U.S. 5,639,555) for the reasons set forth above.

Independent Claim 53

The Office rejected newly added independent Claim 53 for failing to comply with the written description requirement and/or for indefiniteness. Applicants submit that the amendment to Claim 53 obviates the rejection. Claim 53 now recites a coating that consists

of a homogeneous mixture of an adhesion promoter-containing product and one or more inorganic oxide components.

The adhesion promoter-containing product is a reaction product of a mixture that consists of water, HCl, ethanol and the other silicon-containing components recited in the claim. The adhesion promoter-containing product of Claim 53 is explicitly described in the examples of the present specification. For example, Example 1 describes the preparation of a sol by mixing ethanol, an aqueous HCl solution, tetraethoxysilane, methyltriethoxysilane, and GLYMO. This reaction product, e.g., hydrolysis product, is subsequently mixed with an alumina (e.g. an inorganic oxide) and homogenized to form the sol. The resulting sol is deposited on a substrate which is then subjected to heat treatment in an oven at a temperature of 200°C. Applicants submit that it is readily evident to those of ordinary skill in the art that heating a mixture comprising the reaction product of the above-identified components and an inorganic oxide will dry the adhesion promoter-containing product and leave a homogenous mixture that consists of the adhesion promoter-containing product and the inorganic oxide component.

Even the Office admits that drying a coating made from a sol containing volatile materials forms a product that includes only an adhesion promoter and an inorganic oxide (see paragraph No. 22 on page 16 of the November 23, 2009 Office Action).

Applicants request withdrawal of the rejection for failing to comply with the written description requirement and/or indefiniteness of Claim 53.

Applicants further submit that Claim 53 is not obvious over the cited art. In particular, neither the Penth nor the Bishop patents disclose or suggest any composition or substrate which encompasses the substrate of present Claim 53. As admitted by the Office, Penth fails to disclose the inclusion of a glycidylloxy functionalized silane or methacryloxy functionalized silane in an adhesion promoter composition. Bishop, on the other hand,

requires the inclusion of at least one ingredient which is excluded from the present claims; namely, a “tris(silylorgano)amine” (see the Abstract and throughout the Bishop disclosure). Bishop only discloses the inclusion of a glycidyloxy and/or a tryloxy-functionalized silane in combination with a tris(silylorgano)amine. Nowhere in Bishop is an adhesion promoter that includes only a glycidyloxy- or methacryloxy-functionalized silane disclosed.

If one accepts the Office’s argument that it is appropriate to combined Bishop and Penth (Applicants make no such admission), then the combined art would at best disclose an adhesion promoter that includes both a tris(silylorgano)amine and either or both of a glycidyloxy- or methacryloxy-functionalized silane. The combined art does not, however, suggest the presently claimed invention.

Applicants thus submit that withdrawal of the rejection is appropriate.

With respect to the rejection of the claims for obviousness-type double patenting, Applicants submit that the rejections should be withdrawn for the same reasons set forth above with respect to the patentability of the presently claimed invention in view of Penth and Bishop. According to the Office the obviousness-type double patenting rejections are based on the same arguments as the rejection of the claims in view of Penth and Bishop (see paragraph No. 24 on page 17 of the November 23, 2009 Office Action). The arguments above should therefore distinguish the presently claimed invention over the claims of the co-pending applications and/or patents.

For the reasons discussed above in detail, Applicants submit that all now-pending claims are in condition for allowance. Applicants request withdrawal of the rejection and a mailing of a Notice of Allowance or an indication of allowable subject matter.

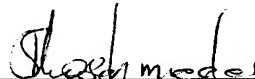
Respectfully submitted,

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